

WHAT IS CLAIMED IS:

1. A passive optical network transmission system comprising:  
a plurality of subscriber unit including optical network  
unit processing portions for terminating an optical  
communication network;

a station unit including optical line terminal processing  
portion terminating said optical communication network;

means for monitoring increasing and decreasing of idle  
cells;

means for recognizing accumulation of cell in said optical  
network unit processing portion depending upon the result of  
monitoring; and

means for individually handling band process in said  
optical communication network according to necessary or  
unnecessary of band restriction depending upon traffic type.

2. A passive optical network transmission system as set forth  
in claim 1, which further comprises means for rejecting packet  
which cannot be processed.

3. A passive optical network transmission system as set forth  
in claim 1, wherein said optical line terminal processing portion  
includes grant generating means for non-band restricted cell  
for generating transmission permission for the non-band  
restricted cell by assigning extra band constantly, and idle

cell detecting means for monitoring increasing and decreasing said idle cell.

4. A passive optical network transmission system as set forth  
in claim 3, wherein said optical line terminal processing portion  
further includes means for discriminating said transmission  
permission for permitting individual process of traffic  
requiring band restriction and traffic not requiring band  
restriction.

5. A passive optical network transmission system as set forth  
in claim 4, wherein said optical line terminal processing portion  
further includes means for setting weighting function for  
estimating variation of said traffic.

6. A passive optical network transmission system as set forth  
in claim 1, wherein said optical line terminal includes means  
for notifying said subscriber unit stopping transmission for  
packet information.

7. A dynamic band assignment method in a passive optical  
network transmission system including a plurality of subscriber  
unit including optical network unit processing portions for  
terminating an optical communication network and a station unit  
including optical line terminal processing portion terminating

said optical communication network, comprising the steps of  
monitoring increasing and decreasing of idle cells;  
recognizing accumulation of cell in said optical network  
unit processing portion depending upon the result of monitoring;

5 and

individually handling band process in said optical  
communication network according to necessary or unnecessary  
of band restriction depending upon traffic type.

10 8. A dynamic band assignment method as set forth in claim  
7, which further comprises a step of rejecting packet which  
cannot be processed.

15 9. A dynamic band assignment method as set forth in claim  
8, wherein said optical line terminal processing portion  
performs process comprising the steps of generating  
transmission permission for the non-band restricted cell by  
assigning extra band constantly, and monitoring increasing and  
decreasing said idle cell.

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10. A dynamic band assignment method as set forth in claim  
9, wherein said optical line terminal processing portion  
performs process comprising the step of discriminating said  
transmission permission for permitting individual process of  
25 traffic requiring band restriction and traffic not requiring

band restriction.

11. A dynamic band assignment method as set forth in claim  
10, wherein said optical line terminal processing portion  
5 performs process comprising the step of setting weighting  
function for estimating variation of said traffic.

12. A dynamic band assignment method as set forth in claim  
7, wherein said optical line terminal processing portion  
10 performs process comprising the steps of notifying said  
subscriber unit stopping transmission for packet information.